CLAIMS

What is claimed is:

1. A wall comprising:

a first layer including a substantially aesthetically completed exterior surface;

a second layer;

a third layer interposed between the first and second layers;

the third layer being a layer of a cementitious material formed between the first and second layers; and

at least a first tie extending between the first and second layers.

2. The wall as set forth in Claim 1, in which the first layer includes a plurality of first blocks.

3. The wall as set forth in Claim 2, in which at least one of the blocks forming the plurality of first blocks is formed with at least a first receptacle, the third layer being formed between the first and second layers and being received in at least a portion of the at least first receptacle.

4. The wall as set forth in Claim 2, in which the at least first tie includes a first end and a second end, the first end being mounted to the first layer, the second end being mounted to the second layer, the first end being spaced from the exterior surface whereby the at least first tie is substantially invisible from the exterior surface.

5. The wall as set forth in Claim 2, in which at least one of the blocks forming the plurality of first blocks is formed with a receptacle, the receptacle being spaced from the exterior surface, at least a portion of the at least first tie being received in the receptacle whereby the at least first tie is substantially invisible from the exterior surface.

6. The wall as set forth in Claim 1, in which the second layer is formed at least partially of an insulative material.

7. The wall as set forth in Claim 1, in which the second layer includes a substantially aesthetically completed exterior surface.

8. The wall as set forth in Claim 7, in which the first layer is formed of a plurality of first blocks, and in which the second layer is formed of a plurality of second blocks, the at least first tie extending between one of the first blocks and one of the second blocks.

9. The wall as set forth in Claim 8, in which the at least first tie, the one of the first blocks, and the one of the second blocks together form an assembled construction unit.

10. The wall as set forth in Claim 9, in which the wall is formed of a plurality of the assembled construction units.

11. The wall as set forth in Claim 1, in which the third layer includes at least a first reinforcement member.

12. The wall as set forth in Claim 11, in which the at least first tie includes a strut, the strut including at least a first socket formed therein, the at least first reinforcement member being disposed in the socket.

13. The wall as set forth in Claim 11, in which the at least first tie includes a strut, the strut including a plurality of sockets formed therein, the at least first reinforcement member being disposed in one of the sockets depending upon the strengthening effect desired from the at least first reinforcement member.

14. The wall as set forth in Claim 1, in which the at least first tie includes a strut, at least a portion of the strut extending generally through the third layer, the at least portion of the strut extending generally through the third layer having a greater degree of stiffness in a vertical direction than in a horizontal direction.

15. The wall as set forth in Claim 1, in which the at least first tie includes a strut, at least a portion of the strut extending generally through the third layer, the at least portion of the strut that extends through the third layer having a vertical area and a horizontal area, the vertical area being greater than the horizontal area.

16. The wall as set forth in Claim 1, in which the at least first tie includes a strut, at least a portion of the strut extending through the third layer and having a vertical dimension and a horizontal dimension, the vertical dimension being generally greater than the horizontal dimension.

17. The wall as set forth in Claim 1, in which at least one of the first and second layers includes a slot formed therein, the slot including a constricted throat, and in which the at least first tie includes a plug, at least a portion of the plug being received in the slot.

18. The wall as set forth in Claim 17, in which the at least first tie includes an abutment member disposed adjacent the plug, and in which the at least one of the first and second layers includes a surface, the abutment member being disposed against the surface adjacent the slot.

19. A wall having a masonry external surface, the wall comprising:
a first layer formed at least partially of a masonry material;
the first layer including the masonry external surface;
a second layer formed of a second material;
a third layer interposed between the first and second layers; and
at least a first tie extending between the first and second layers.

20. The wall as set forth in Claim 19, in which the third layer is one of a cured material and a set material formed between the first and second layers.

21. The wall as set forth in Claim 20, in which the third layer is formed of a masonry material.

22. The wall as set forth in Claim 21, in which the third layer is formed of a cementitious material.

23. The wall as set forth in Claim 19, in which the first layer is formed of a plurality of first blocks.

24. The wall as set forth in Claim 23, in which at least one of the blocks is formed with at least a first receptacle, the third layer being formed between the first and second layers and being received in at least a portion of the at least first receptacle.

25. The wall as set forth in Claim 23, in which the at least first tie includes a first end and a second end, the first end being mounted to the first layer, the second end being mounted to the second layer, the first end being spaced from the masonry external surface whereby the at least first tie is substantially invisible from the masonry external surface.

26. The wall as set forth in Claim 23, in which at least one of the blocks forming the plurality of first blocks is formed with a receptacle, the receptacle being spaced from the masonry external surface, at least a portion of the at least first tie being received in the receptacle whereby the at least first tie is substantially invisible from the masonry external surface.

27. The wall as set forth in Claim 19, in which the second material includes an insulative material, the third layer being formed between the first and second layers.

28. The wall as set forth in Claim 19, in which the second material is a masonry material.

29. The wall as set forth in Claim 28, in which the first layer is formed of a plurality of first blocks, and in which the second layer is formed of a plurality of second blocks, the at least first tie extending between one of the first blocks and one of the second blocks.

30. The wall as set forth in Claim 29, in which the at least first tie, the one of the first blocks, and the one of the second blocks together form an assembled construction unit.

31. The wall as set forth in Claim 30, in which the third layer includes an intermediate masonry layer and an intermediate insulative layer, the intermediate insulative layer being disposed against one of the first and second layers, the intermediate masonry layer being formed between the intermediate insulative layer and the other of the first and second layers.

32. The wall as set forth in Claim 30, in which the wall is formed of a plurality of the assembled construction units.

33. The wall as set forth in Claim 19, in which the third layer includes at least a first reinforcement member.

34. The wall as set forth in Claim 33, in which the at least first tie includes at least a first support, the at least first reinforcement member being mounted on the at least first support.

35. The wall as set forth in Claim 34, in which the third layer includes a second reinforcement member, and in which the at least first tie includes a second support, the second reinforcement member being mounted on the second support.

36. The wall as set forth in Claim 35, in which the at least first tie includes a saddle, the at least first and second supports being disposed on the saddle, the saddle being adjustable with respect to the first and second walls.

37. The wall as set forth in Claim 35, in which the at least first and second reinforcement members are oriented generally parallel with the first and second layers, the at least first and second reinforcement members being offset from one another along a direction extending generally between the first and second layers.

38. The wall as set forth in Claim 33, in which the at least first tie includes a strut, the strut including at least a first socket formed therein, the at least first reinforcement member being disposed in the socket.

39. The wall as set forth in Claim 33, in which the at least first tie includes a strut, the strut including a plurality of sockets formed therein, the at least first reinforcement member being disposed in one of the sockets depending upon the strengthening effect desired from the at least first reinforcement member.

40. The wall as set forth in Claim 19, in which the at least first tie includes a strut, at least a portion of the strut extending generally through the third layer, the at least portion of the strut extending generally through the third layer having a greater degree of stiffness in a vertical direction than in a horizontal direction.

41. The wall as set forth in Claim 19, in which the at least first tie includes a strut, at least a portion of the strut extending generally through the third layer, the at least portion of the strut that extends through the third layer having a vertical area and a horizontal area, the vertical area being greater than the horizontal area.

42. The wall as set forth in Claim 19, in which the at least first tie includes a strut, at least a portion of the strut extending through the third layer and having a vertical dimension and a horizontal dimension, the vertical dimension being generally greater than the horizontal dimension.

43. The wall as set forth in Claim 19, in which at least one of the first and second layers includes a slot formed therein, the slot including a constricted throat, and in which the at least first tie includes a plug, at least a portion of the plug being received in the slot.

44. The wall as set forth in Claim 43, in which the at least first tie includes an abutment member disposed adjacent the plug, and in which the at least one of the first and second layers includes a surface, the abutment member being disposed against the surface adjacent the slot.

45. A tie structured to extend between a first layer of material and a second layer of material for use in constructing a wall, the wall including the first layer, the second layer, and a third layer interposed between the first and second layers, the tie comprising:

a strut;

the strut including a first face and a second face opposite one another;

a plurality of first flanges disposed on the strut and extending outwardly from the first face, the first flanges being substantially parallel with one another and spaced apart from one another, the first flanges being substantially semi-circular in shape and including an arcuate edge facing away from the first face, the first flanges being structured and arranged to be cooperable with the first layer; and

a plurality of second flanges disposed on the strut and extending outwardly from the first face, the second flanges being substantially rectangular in shape, the second flanges being substantially parallel with one another and spaced apart from one another.

46. The tie as set forth in Claim 45, in which at least one of the first flanges includes a substantially semi-circular first flange extension extending outwardly from the second face, and in which at least one of the second flanges includes a substantially rectangular second flange extension extending outwardly from the second face.

47. The tie as set forth in Claim 45, in which the first flanges each include a substantially semi-circular first flange extension extending outwardly from the second face, and in which the second flanges each include a substantially rectangular second flange extension extending outwardly from the second face.

48. The tie as set forth in Claim 45, in which the strut includes a supplemental support member, the supplemental support member including a fastening plate disposed adjacent one of the second flanges.

49. The tie as set forth in Claim 45, in which the strut includes a shank and a rib, the rib being disposed on the shank, the first and second faces being defined on the shank, the rib extending between one of the first flanges and one of the second flanges.

50. The tie as set forth in Claim 49, in which the rib includes a plurality of sockets formed therein, the sockets being structured and arranged to receive a reinforcement member in one of the sockets depending upon the strengthening effect desired from the reinforcement member.

51. The tie as set forth in Claim 50, in which the rib is of a first area, and in which the portion of the shank that extends between the one of the first flanges and the one of the second flanges is of a second area, the first area being greater than the second area.

52. A tie structured to extend between a pair of members to form an assembled construction unit for use in constructing a wall, each of the members including at least a first receptacle, the wall including at least the construction unit and a third layer interposed between the members, the tie comprising:

a shank;

a first leg structured to be received in the at least first receptacle of one of the members;

a second leg structured to be received in the at least first receptacle of the other of the members; and

a pair of caps, one of the caps being receivable on the first leg, the other of the caps being receivable on the second leg.

53. The tie as set forth in Claim 52, in which the shank includes at least a first support, the at least first support being structured to carry a first reinforcement member.

54. The tie as set forth in Claim 53, in which the shank includes a second support, the second support being structured to carry a second reinforcement member.

55. The tie as set forth in Claim 54, in which the shank includes a saddle, the at least first and second supports being disposed on the saddle, the saddle being adjustable with respect to the first and second legs.

56. The tie as set forth in Claim 54, in which the at least first and second supports are offset from one another along a direction extending generally between the first and second legs.

57. A tie structured to extend between a first layer of material and a second layer of material for use in constructing a wall, the wall including the first layer, the second layer, and a third layer interposed between the first and second layers, the tie comprising:

a strut;

a tapered plug disposed at an end of the strut, the plug being structured and arranged to cooperate with a slot formed in the first layer and having a constricted throat;

the strut including a first face and a second face opposite one another; and

a plurality of first flanges disposed on the strut and extending outwardly from the first face, the first flanges being substantially parallel with one another and spaced apart from one another, the first flanges being structured and arranged to be cooperable with the second layer.

58. The tie as set forth in Claim 57, in which the plug includes a narrowed end, and in which the plug includes an abutment member disposed adjacent the narrowed end, the abutment member being structured and arranged to engage a surface of the first layer adjacent the slot.

59. The tie as set forth in Claim 58, in which the plug includes a stop, the stop being oriented generally perpendicular to the abutment member, the stop being structured and arranged to limit movement of the plug with respect to the slot.

60. The tie as set forth in Claim 57, in which at least one of the flanges forming the plurality of first flanges includes a flange extension extending outwardly from the second face.

61. The tie as set forth in Claim 57, in which the flanges forming the plurality of first flanges include a flange extension extending outwardly from the second face.

62. The tie as set forth in Claim 57, in which the strut includes a shank and a rib, the rib being disposed on the shank, the first and second faces being defined on the shank, the rib extending between the plug and one of the flanges forming the plurality of first flanges.

63. The tie as set forth in Claim 62, in which the rib includes a plurality of sockets formed therein, the sockets being structured and arranged to receive a reinforcement member in one of the sockets depending upon the strengthening effect desired from the reinforcement member.

64. The tie as set forth in Claim 63, in which the rib is of a first area, and in which the portion of the shank that extends between the plug and the one of the flanges forming the plurality of first flanges is of a second area, the first area being greater than the second area.

65. A construction unit for use in constructing a wall, the construction unit comprising:

a pair of blocks; and

a tie extending between the blocks;

the tie retaining the pair of blocks substantially rigidly with respect to one another to provide a space between the blocks; and

the wall unit being structured and arranged to receive a material in the space to form the wall.

66. The construction unit as set forth in Claim 65, in which the tie includes a shank and a pair of legs, one of the legs being mounted to one of the blocks, the other of the legs being mounted to the other of the blocks.

67. The construction unit as set forth in Claim 66, in which each of the blocks is formed with at least a first receptacle, at least a portion of each of the legs being mounted in the at least first receptacles of the blocks.

68. The construction unit as set forth in Claim 67, in which the tie includes a pair of caps, of one of the caps being disposed on the first leg, the other of the caps being disposed on the second leg.

69. The construction unit as set forth in Claim 68, in which at least a portion of one of the blocks is interposed substantially between one of the legs and one of the caps, and in which at least a portion of the other block is interposed substantially between the other leg and the other cap.

70. The construction unit as set forth in Claim 67, in which the at least first receptacle is a slot having a constricted throat.

71. The construction unit as set forth in Claim 70, in which each of the legs includes a first portion and a second portion, each first portion being received substantially within one of the at least first receptacles of the blocks, each second portion being disposed against a surface of one of the blocks substantially adjacent the at least first receptacle.

72. The construction unit as set forth in Claim 66, in which the shank includes at least a first support structured to carry a first reinforcement member.

73. The construction unit as set forth in Claim 72, in which the shank includes a second support structured to carry a second reinforcement member.

74. The construction unit as set forth in Claim 73, in which the shank includes a saddle, the at least first and second supports being disposed on the saddle, the saddle being adjustable with respect to the first and second legs.

75. The construction unit as set forth in Claim 73, in which the at least first and second supports are offset from one another along a direction extending generally between the first and second legs.

76. The construction unit as set forth in Claim 65, in which each of the blocks includes a masonry external surface, the masonry external surfaces of the blocks of the construction unit facing away from one another, the tie being substantially invisible from the masonry external surfaces.

77. A method of forming a wall having a substantially aesthetically completed exterior surface, the method comprising:

providing a plurality of blocks, each of the blocks being formed with at least a first receptacle and including a substantially aesthetically completed exterior block surface;

providing a plurality of ties;

providing at least a first sheet of insulative material;

mounting the ties between the blocks and the at least first sheet of insulative material to form a space between the blocks and the at least first sheet of insulative material;

aligning the substantially aesthetically completed exterior block surfaces with one another; and

forming an intermediate layer in the space between the blocks and the at least first sheet of insulative material.

78. The method as set forth in Claim 77, in which said forming an intermediate layer includes receiving a quantity of a masonry material in the space between the blocks and the at least first sheet of insulative material and one of curing and setting the masonry material.

79. The method as set forth in Claim 78, in which said forming an intermediate layer includes receiving at least a portion of the intermediate layer in at least a portion of the at least first receptacle.

80. The method as set forth in Claim 77, in which said mounting the ties includes mounting a first set of ties below a first course of the blocks and mounting a second set of ties above the first course of blocks.

81. The method as set forth in Claim 80, in which said mounting a second set of ties includes mounting an intermediate tie between a pair of adjacent blocks of the first course and mounting a central tie generally centrally on one of the blocks of the first course.

82. The method as set forth in Claim 81, further comprising placing a second course of blocks atop the first course of blocks.

83. The method as set forth in Claim 82, in which said placing a second course includes receiving at least a portion of the central tie in the at least first receptacle formed in each of a pair of adjacent blocks of the second course.

84. The method as set forth in Claim 77, in which said mounting the ties includes receiving at least a portion of one of the ties in the at least first receptacle formed in one of the masonry blocks.

85. The method as set forth in Claim 84, in which said mounting the ties includes receiving at least a portion of one of the ties in a receptacle formed in each of a pair of adjacent masonry blocks of the second course.

86. A method of forming a wall having a masonry external surface, the method comprising:

providing a plurality of masonry blocks, each of the masonry blocks being formed with at least a first receptacle;

providing a plurality of ties;

providing at least a first sheet of insulative material;

mounting the ties between the masonry blocks and the at least first sheet of insulative material to form a space between the masonry blocks and the at least first sheet of insulative material; and

forming an intermediate layer in the space between the masonry blocks and the at least first sheet of insulative material.

87. The method as set forth in Claim 86, in which said forming an intermediate layer includes receiving a quantity of a masonry material in the space between the masonry blocks and the at least first sheet of insulative material and one of curing and setting the masonry material.

88. The method as set forth in Claim 87, in which said forming an intermediate layer includes receiving at least a portion of the intermediate layer in at least a portion of the at least first receptacle.

89. The method as set forth in Claim 86, in which said mounting the ties includes mounting a first set of ties below a first course of the masonry blocks and mounting a second set of ties above the first course of masonry blocks.

90. The method as set forth in Claim 89, in which said mounting a second set of ties includes mounting an intermediate tie between a pair of adjacent masonry blocks of the first course and mounting a central tie generally centrally on one of the masonry blocks of the first course.

91. The method as set forth in Claim 90, further comprising placing a second course of masonry blocks atop the first course of masonry blocks.

92. The method as set forth in Claim 91, in which said placing a second course includes receiving at least a portion of the central tie in the at least first receptacle formed in each of a pair of adjacent masonry blocks of the second course.

93. The method as set forth in Claim 90, further comprising placing a second sheet of insulative material atop the at least first sheet of insulative material.

94. The method as set forth in Claim 86, in which said mounting the ties includes receiving at least a portion of one of the ties in the at least first receptacle formed in one of the masonry blocks.

95. The method as set forth in Claim 94, in which said mounting the ties includes receiving at least a portion of one of the ties in a receptacle formed in each of a pair of adjacent masonry blocks of the second course.